## Supplementary Information

# A curious interplay in the films of N-heterocyclic carbene $Pt^{II}$ complexes upon deposition of alkali metals

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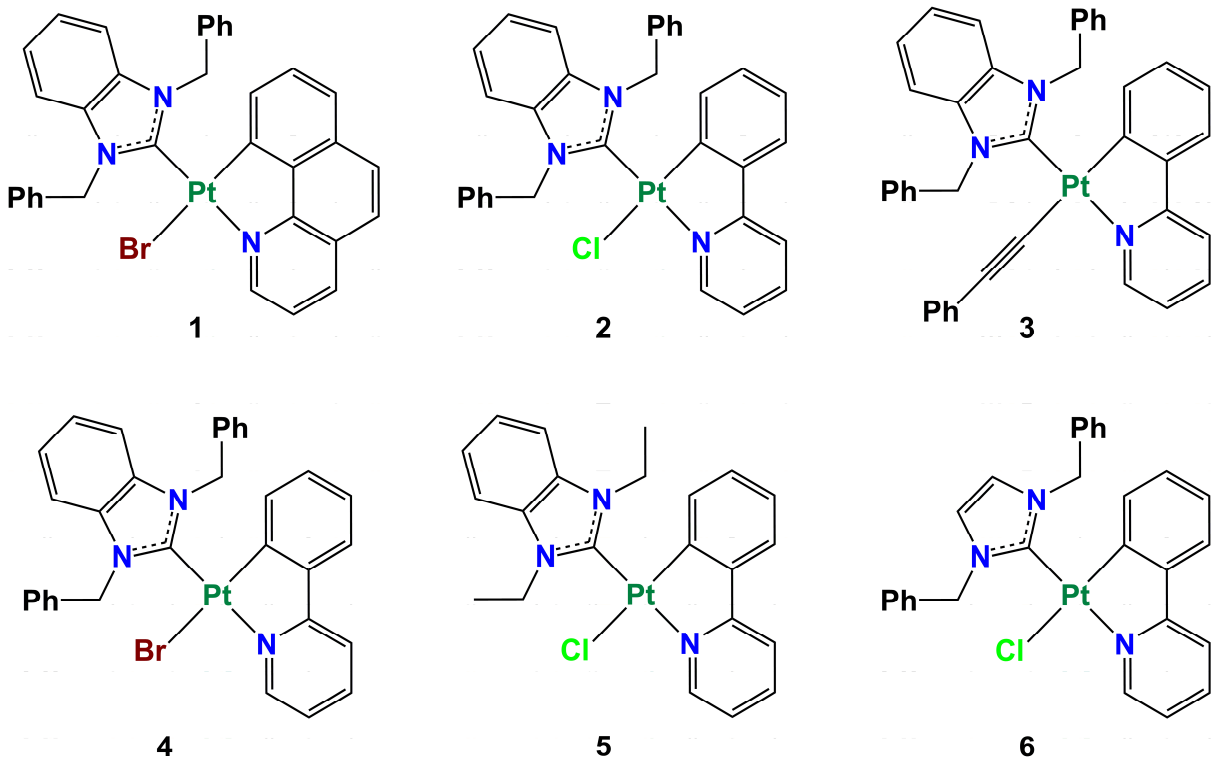


**Figure S1.** Schematic representation of the [Pt(N^C)(NHC)L] complexes.

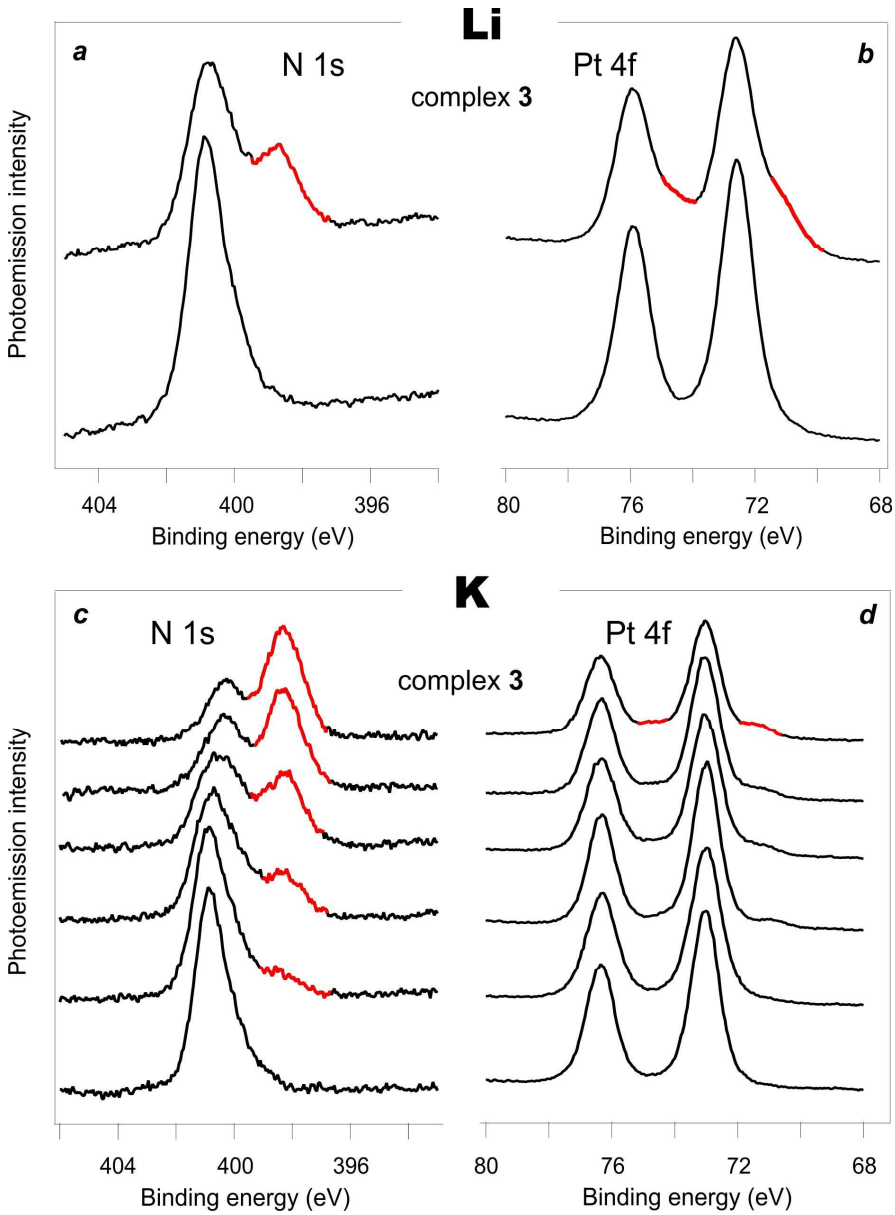


**Figure S2**. N 1s (a), (c) and Pt 4f (b), (d) core-level spectra of the pristine complex **3** and after deposition of Li and K, respectively.

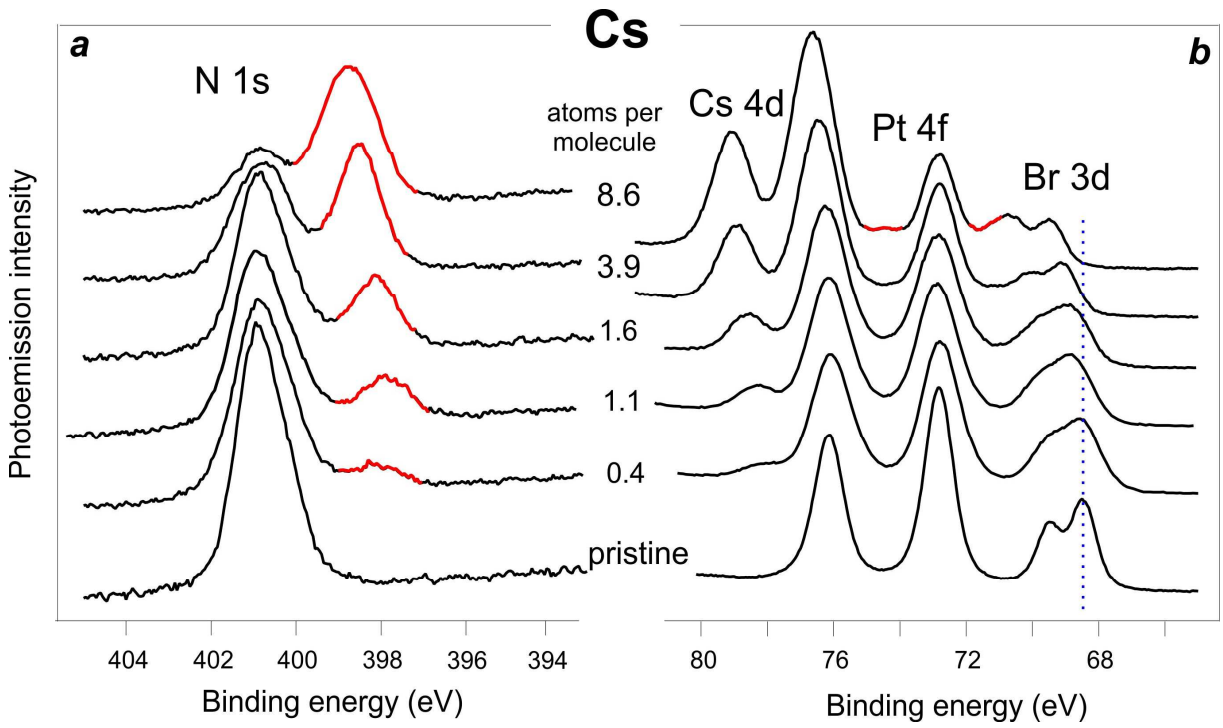


**Figure S3**. N 1s (a) and overlapping Cs 4d, Pt 4f and Br 3d (b) core-level spectra of the pristine complex **1** and after sequential deposition of Cs.

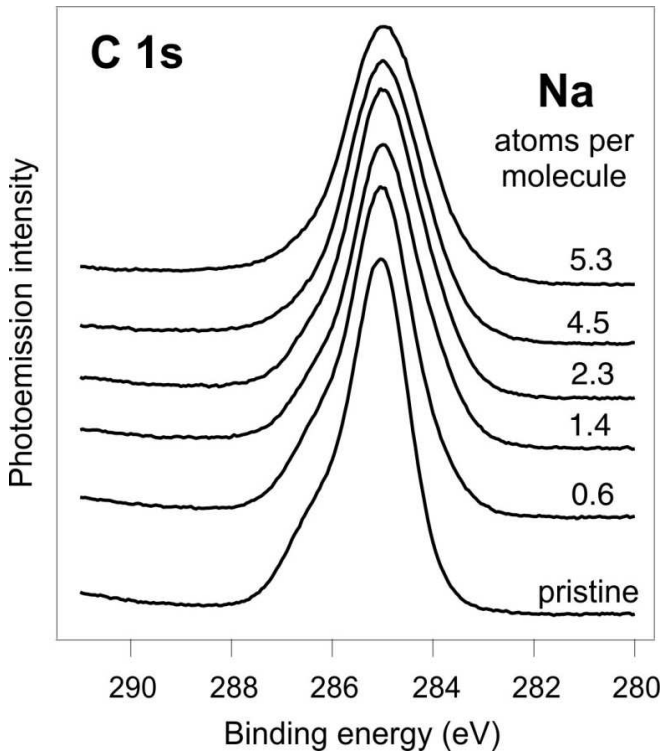


**Figure S4.** C 1s core-level PE spectra of the pristine complex **1** and after sequential deposition of Na.

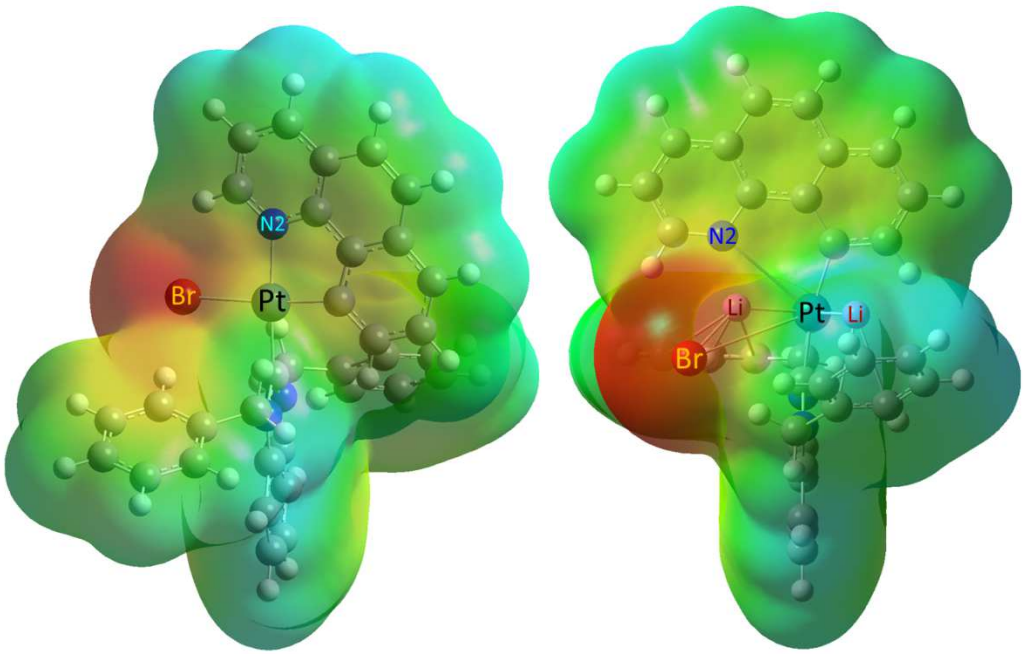


**Figure S5.** Mulliken charge distribution of the [Pt(N^C)(NHC)Br] molecule alone (left) and interacting with lithium atoms (right). The colour scale from red to blue, that represent negative and positive charges, respectively. Note the strong charge transfer interaction between Li and Pt atoms, and the visible electrostatic interaction between ionized lithium and electronegative bromine (on the right panel).

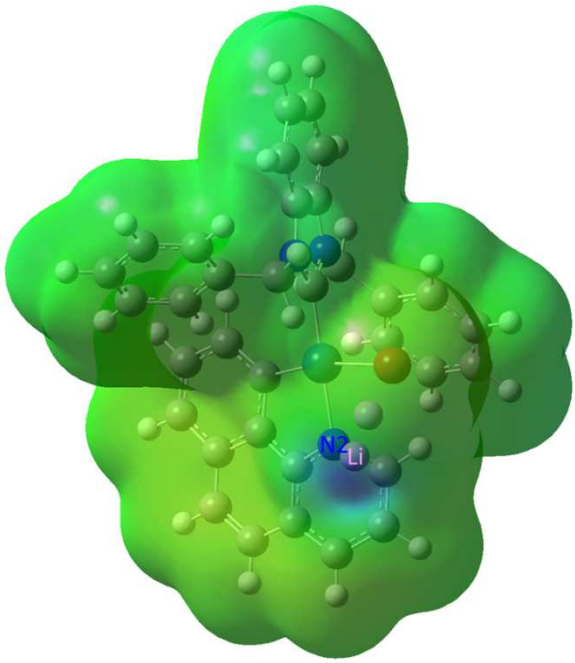


**Figure S6.** Mulliken charge distribution of the [Pt(N^C)(NHC)Br] molecule interacting with lithium atom – note the positive charge around the lithium atom as it donated electrons to the N2-atom the and Pt-centre.

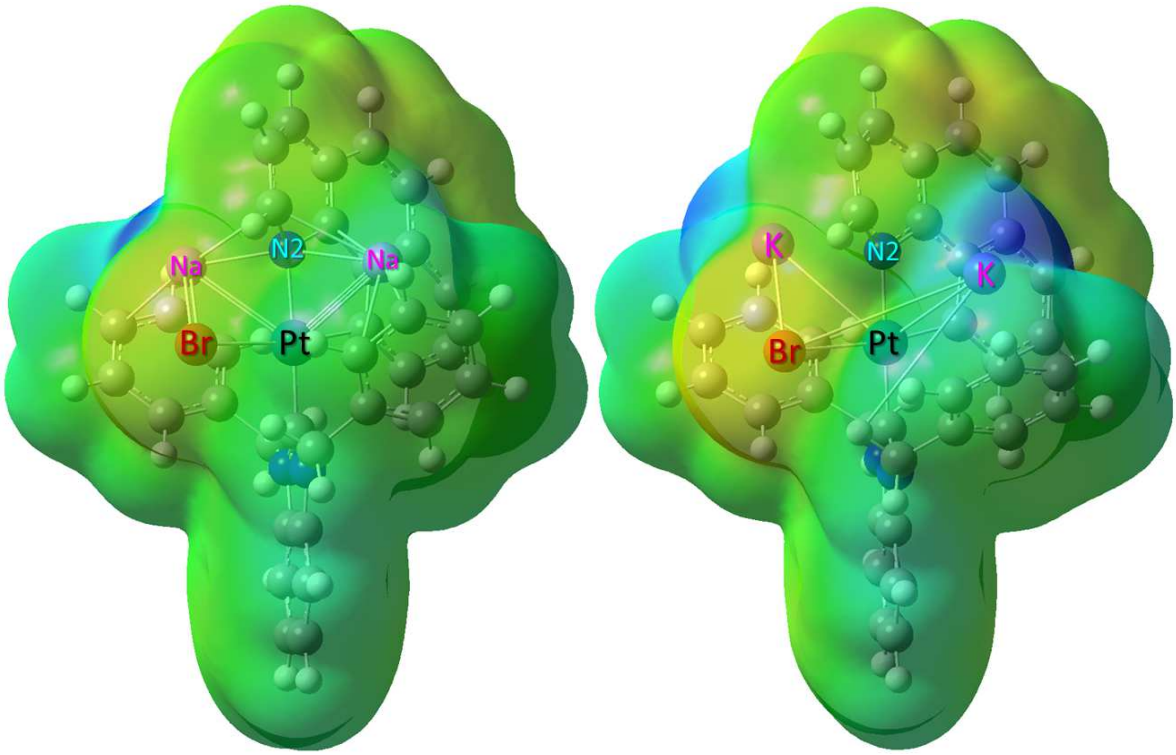


**Figure S7.** Mulliken charge distribution of the [Pt(N^C)(NHC)Br] molecule interacting with sodium (left) and potassium (right) atoms. The colour scale is the same as in Figure S5.